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## Fraud Inquiry: Harsh Treatment for NIH on Capitol Hill

In a Congressional hearing unlike any held before, the National Institutes of Health and academic science were lashed and reviled this week as negligent in rooting out fraudulent research. MIT, Harvard, and Tufts were singled out for scorn by Congressmen, and extremely unkind words were uttered about several distinguished researchers (none of them present), including Nobel Laureate David Baltimore, Director of the Whitehead Institute, at MIT, and Eugene Braunwald, Chairman of the Department of Medicine at the Harvard-affiliated Brigham and Women's Hospital. When the session concluded—after six uninterrupted, lunch-skipping hours of testimony elicited by often-scornful questioning—senior NIH officials looked shaken and disturbed.

The hearing was held April 12 by the Oversight and Investigations Subcommittee of the House Energy and Commerce Committee, both chaired by John D. Dingell (D-Mich.), one of the most powerful figures on Capitol Hill as well as a formidable interrogator in committee proceedings. Dingell's Committee holds jurisdic-

tor of the challenged data, Thereza Imanishi-Kari, had later moved. But other scientists regard the paper as in error, including Howard Temin, of the University of Wisconsin, who shared the 1975 Nobel Prize with Baltimore. Temin was quoted in the *New York Times* as saying, "It does appear that the paper was in error."

The Congressional hearing also brought again into public view, with raucous assurances of whistle-blower protection by Chairman Dingell, NIH's two self-appointed ombudsmen of scientific integrity, Walter Stewart and Ned Feder. Both hold appointments as laboratory researchers on the NIH intramural staff in Bethesda, Md. But—to the dismay of the NIH management—they mainly occupy themselves with fraud investigations, insisting that maintaining the purity of the science  
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### ***Two Committees Pursue Fraud Issue—P. 3*** ***Carnegie Launches R&D Policy Study—P. 8***

tion over basic statutory authority for NIH, a good deal of which is up for renewal this year. His views on NIH might be the product of overwrought interpretation, but the NIH management—which generally gets its way elsewhere on Capitol Hill—is aware of the perils of crossing John Dingell.

The hearing, titled "Scientific Fraud and Misconduct in the National Institutes of Health Biomedical Grant Program," was built around a poignant case that touched and disturbed even some of the most hard-boiled believers in the intrinsic integrity of science. This involved a former postdoctoral fellow at MIT, Margot O'Toole, who persuasively testified, with corroboration by others, that she was railroaded out of a scientific career when she raised questions about the accuracy of data in a paper co-authored by Baltimore and later published in *Cell* of April 25, 1986. In a quivering voice, O'Toole told the Subcommittee, "My dispute has halted my career, disrupted my social milieu, and had a devastating effect on my life." She said she has been unemployed for over a year.

O'Toole's charges, of error rather than deliberate fraud, were dismissed by reviews commissioned by MIT and Tufts, where the principal investigator and origina-

## In Brief

President Reagan devoted his weekly radio address of April 2 to science. Faithful to the President's words exactly as uttered, the transcript issued by the White House Press office reads: "This year we'll begin work on the great grandchild of those particle accelerators that have spent—meant so much to our economic growth. It's called the Superconducting Super Collider."

*A start on the SSC awaits Congressional action a long way down the appropriations trail. But early signs are moderately favorable. The House Budget Committee has allotted \$100 million of the \$363 million sought for a start. And last week the Senate Budget Committee voted for a 25 percent increase over last year's high-energy physics budget, with kind mention, but no dollar amounts, directed at the SSC.*

US R&D spending from all sources will total a record \$132 billion in 1988, NSF forecasts, but the "real" growth pace is tapering off. From 1977-82, it averaged 4.5 percent; 1982-85, 6.8 percent; 1986-87, 4 percent. The figure for this year is 3 percent. The data, with much more, are in NSF Highlights Report No. 88-303 (4 pp., free), from: NSF, Division of Science Resources Studies, 1800 G St. NW, Washington, DC 20550; tel. 202/634-4634.

*Under its new Japan Initiatives Program, NSF is expanding support for exchanges with Japan, including long-term visits. For information: NSF, Division of International Programs, Room 1208, 1800 G St. NW, Washington, DC; tel. 202/357-9558.*

## ... He "Got Very Angry with Me" for Finding Error

(Continued from page 1)

tific literature is at least as important as adding to it. And they've been at it since 1984, when they first drafted a damning review pinpointing numerous, easily detected errors that distinguished co-authors failed to flag in the fraudulent papers produced by Harvard's notorious John Darsee (SGR March 15, April 1, 15, 1985). The NIH management has decreed that lab work is their prime responsibility and they may devote only 20 percent of their time to fraud busting. But Feder and Stewart, arguing that they've been deprived of necessary equipment and sufficient laboratory space, do not appear to be bound by that formula.

After announcing that the Committee took a special interest in protecting its witnesses against retribution, Dingell listened to O'Toole's summary of a prepared statement and then questioned her in a detailed fashion that reflected extensive staff preparations for the hearing.

**Dingell.** Did Dr. Imanishi-Kari admit to you that one of the graphs in that paper did not represent the true results and, in fact, the results you obtained were the correct ones?

**O'Toole.** That's correct.

**Dingell.** Did you attempt to inform Dr. [David] Weaver [of the Whitehead Institute, who is lead author of the *Cell* paper] of your concerns, and, if so, what action did he take?

**O'Toole.** It was a slow process. I did inform Dr. Weaver on three different occasions. The first time, when my own work was not being repeated well, I just informed him because he was a collaborator. And then as I realized that the reagents didn't work the way they should, I informed him, and then as my doubts escalated to genuine concern, I informed him again . . . He was too busy [on] those days [for a discussion].

O'Toole then described how, at the suggestion of a senior scientist, she attempted to express her concerns to Henry Wortis, of Tufts, who was a colleague of Dr. Imanishi-Kari, "but he said he didn't want to be involved." Wortis did review the notes, she continued, "and he said he would confront Dr. Imanishi-Kari with the notes and that if my objections could be verified, he would 'rehabilitate' Dr. Imanishi-Kari."

**Dingell.** Dr. Wortis found evidence that mistakes were made, but they declined to recommend that a public note of correction was necessary—is that right?

**O'Toole.** I only received a copy of that recently through the efforts of this Subcommittee . . .

In response to questioning by Dingell, O'Toole then testified that two senior officials at MIT, Mary Rowe, assistant to the President, and Dr. Herman N. Eisen, Director of O'Toole's training program, took a seemingly helpful interest in the case. But Eisen, she said,

"got very angry with me and said I was charging fraud. And I said, 'No, I was just looking at the data.' And he said it looked like the same thing to him. And then after I gave him the memo [detailing her concerns], he called me and asked me how could one explain these discrepancies without invoking fraud. I said that the judgment of the conduct issue was not my job. I was a subordinate. My responsibilities were to the scientific accuracy. I was very adamant about that, that I was talking only about the scientific content of the paper. Nevertheless, in the report that he wrote, that he kept secret from me for a long time, he said that I had alleged misconduct. And that's not true."

Dingell then noted that following the discussion with O'Toole, Eisen held a meeting with O'Toole, Baltimore, Weaver, and Imanishi-Kari.

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### Problems with the Data

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**Dingell.** During the course of that meeting, did Dr. Imanishi-Kari admit there were problems with the data and the charts in the paper?

**O'Toole.** Yes, she did.

**Dingell.** Did she acknowledge that some of the data was misrepresented?

**O'Toole.** Yes, she acknowledged that some of it was . . . Dr. Baltimore asked her why she published it like that when the reagent didn't work like that. And she said, "I don't know. We must have got that result once."

**Dingell.** What was the reaction of Drs. Baltimore, Eisen, and Weaver . . .

**O'Toole.** Dr. Eisen at the meeting didn't say very much . . . Dr. Baltimore, he treated the matter in a very off-handed way, I would say. He looked at the data that formed the basis for table two, which was one of the major points of the paper. He said, and these were his exact words, "You cannot tell anything at all from this data, one way or the other . . ." But he had his name

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## Two Subcommittees in Race to Hold Hearings on Scientific Fraud

It was open season on scientific fraud last week as two House subcommittees maneuvered to be the first to hold hearings on the subject in this session.

The winner, on the calendar, was the Government Operations Subcommittee on Human Resources and Intergovernmental Relations, chaired by Ted Weiss (D-NY), which led off on Monday, April 11, with a hearing titled "Scientific Fraud and Misconduct and the Federal Response." But the winner in terms of histrionics, length of proceedings, and choice Administration witnesses was the Energy and Commerce Subcommittee on Oversight and Investigations, chaired by John D. Dingell (D-Mich.), which followed the very next day with a hearing titled "Scientific Fraud and Misconduct in the National Institutes of Health Biomedical Grant Program."

Staffs of the two subcommittees had been scuttling around for weeks to assure that their hearings would (1) be first and (2) command the attendance of Robert E. Windom, the Assistant Secretary of Health in the Department of Health and Human Services. After Dingell nailed him down for Tuesday, April 12, Weiss announced that his own hearings would be held on Monday, the 11th. Windom, as it turned out, had nothing to offer beyond a display of his ignorance of the subject, but Congressmen value rank in the witness chair. Accompanying Windom was the No. 2 man at NIH, William Raub.

The Weiss hearing, exploratory and gentle in comparison to Dingell's, had to settle for Katherine Bick, NIH Deputy Director for Extramural Research, as its top Administration witness. The witness casts overlapped in the persons of Ned Feder and Walter

Stewart, of NIH, who testified at both hearings. In both proceedings, it was evident that Congressmen and staff deferred to the pair as independent authorities on scientific fraud.

Why back-to-back hearings on a subject that does not rank high in legislative concerns? There's no single answer, but separate items add up. Fraud in the lab seems to fascinate laymen. Dingell chairs the full Energy and Commerce Committee, which has jurisdiction over NIH. A member of Weiss's staff took an interest in the subject some months ago and has followed Stewart and Feder's self-assumed activities as investigators of fraud.

But perhaps most important, Congressmen are both enthusiastic about biomedical research and annoyed by the we-know-best hubris that emanates from NIH when questions are raised about health priorities, programs, and distribution of the budget.

Among the other witnesses at one or both of the hearings were two whistleblowers in recent fraud episodes, Robert Sprague, of the University of Illinois, and Jerome Jacobstein, of Graduate Hospital, Philadelphia. Also testifying were John T. Edsall, Professor Emeritus, Harvard, and June Price Tagney, Bryn Mawr College.

Dingell said he plans to return to the subject. Weiss is planning a report on fraud. In addition, Rep. John Conyers Jr (D-Calif.), a member of Weiss's Subcommittee, said he's toying with including scientific fraud with government funds in a "white-collar" crime bill that's being drafted by the Judiciary Committee's Criminal Justice Subcommittee, of which Conyers is Chairman.

### **Fraud** (Continued from page 2)

on a paper that made these extraordinary claims based on that paper, and he was admitting that you couldn't tell anything at all from the data. And I agreed entirely. You can't tell. You can't make those claims from that data.

**Dingell.** Dr. Baltimore also said to you that this thing is not at all unusual and that he and others would deal with it in the usual manner. Is that correct?

**O'Toole.** That is correct.

**Dingell.** He also indicated that he would talk to Dr. Imanishi-Kari in private?

**O'Toole.** Yes.

**Dingell.** What did Dr. Baltimore say to you regarding further pursuit of the matter?

**O'Toole.** Oh, he said that he'd advise me very strongly for my own good to drop it. He said that if I didn't, my

only recourse, as he saw it, was to write a letter to the editor, to the journal. And he said if I did that, he himself would write a reply . . . It meant that he would lend his authority to the paper and not back me on saying that there was an error.

**Dingell.** His indication was that readers . . . would believe him and not you?

**O'Toole.** Definitely. Wouldn't you?

**Dingell.** What did Dr. Weaver say to you following the meeting, as you walked down the stairwell?

**O'Toole.** Dr. Weaver was very upset, as I was . . . He sort of escorted me, because I was very shaken. And he said that he greatly admired my courage and that he couldn't believe it . . . I said, "How can Dr. Baltimore think this is all right." And he said, "He doesn't think it's all right."

Under further questioning by Dingell, O'Toole said  
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## ... "A Tremendous Disincentive to Come Forward"

(Continued from page 3)

that she had not contacted NIH officials, but that a colleague of hers, Charles Maplethorpe, a physician-researcher in Imanishi-Kari's laboratory from 1981-85, had informed Stewart and Feder of the case. Maplethorpe, who had been subpoenaed to appear at Dingell's hearing, was then called from the audience and sworn as a witness. Rep. Ron Wyden (D-Oregon) opened with a question about whether he had observed "anything that raised questions in your mind about the doctor's research that was subsequently published in the disputed *Cell* article."

**Maplethorpe.** Yes, I did . . . . To begin with, my suspicions were originally based on her behavior, in a sense that she was conducting the research in a secret manner and would not share the data with other people in the laboratory, including myself . . . . When I asked her technician if I could look at the data, because, quite frankly, it was very surprising, he told me that he wasn't permitted to show me the data . . . .

**Wyden.** Doctor, did you observe what you felt was falsified and misrepresented data?

**Maplethorpe.** Yes.

Wyden, also reflecting the preparation that went into the hearing, asked Maplethorpe to describe a conversation he overheard in June 1985 between Imanishi-Kari and Weaver. It occurred "a few days" after a laboratory seminar at which Imanishi-Kari first publicly discussed the data, prior to publication in *Cell*.

**Maplethorpe.** My impression was that Dr. Weaver was coming to the [seminar] with a friend to speak with Dr. Imanishi-Kari about her data, and my feeling was that they had personal doubts about it, but they wanted to discuss it with her in a friendly way, in a way that would not arouse her suspicions . . . . I heard Dr. Imanishi-Kari tell Dr. Weaver that she had some problems with this reagent call 'bet 1,' which is the reagent that Dr. Margot O'Toole had problems with later. What I heard Dr. Imanishi-Kari tell Dr. Weaver was that she was obtaining the same results that Dr. O'Toole subsequently obtained.

**Wyden.** How were these issues resolved prior to publication by Dr. Baltimore, Dr. Imanishi-Kari, and the others?

**Maplethorpe.** The issues I heard them discuss were not resolved.

**Wyden.** What was your reaction when the *Cell* article appeared with these various concerns unresolved? You were shocked, were you not?

**Maplethorpe.** When a train wreck happens, one is shocked, but if one sees the train wreck about to happen.

**Wyden.** Doctor, did you come forward to anyone at MIT with your knowledge of these events?

**Maplethorpe.** When I was leaving MIT, I felt an obli-

gation to say that I suspected that Dr. Imanishi-Kari was committing fraud, and I told that to an assistant to the President of MIT.

**Wyden.** What was the reaction of the assistant to the President?

**Maplethorpe.** I was handed a Xerox form of the MIT fraud guidelines.

**Wyden.** That was the extent of MIT's response?

**Maplethorpe.** As far as I know.

**Wyden.** Did you have concerns about pressing the issue more forcefully within MIT?

Maplethorpe responded, "That was not my highest concern." And Wyden sympathetically observed, "Obviously, you had your PhD on the line," to which Maplethorpe answered: "I thought there was no question that were I to make a formal charge of fraud that it would not be taken seriously and that I would be the person who would be worse off for it." Maplethorpe later added, "There's a tremendous disincentive to come forward."

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### Contacted Feder and Stewart

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Maplethorpe was taken through a series of questions to elicit how he brought the case to the attention of Feder and Stewart. He related that O'Toole contacted him in January 1986 because "she knew that I seemed to know something about the project that I didn't want to discuss . . . . I told her all of my suspicions . . . . I warned her about the consequences of going forward with this, but she felt a moral obligation to do so." Referred by friends to a *New York Times* article about Feder and Stewart, he continued, "I called them up."

Dingell inquired whether authorities at MIT or Tufts had examined the data underlying the *Cell* paper.

Stewart replied that Herman Eisen, who conducted a review for MIT, had told him "that he had not examined any of the data and he also informed me that he was the only person on the Eisen committee . . . ."

O'Toole explained that "the data they reviewed supported me, but part of the data they needed Dr. Imanishi-Kari didn't bring to the meeting because it was in Portuguese and she didn't think she needed it. And Dr. Baltimore said, 'Of course, you don't need to bring it, Thereza.'" O'Toole added, "Implications were made that I had done something obscene by asking to look at somebody else's data." Imanishi-Kari, O'Toole said, stated that some of the sought-after data didn't exist. O'Toole also testified that she has never been contacted by, or had any discussion with, the NIH staff members officially responsible for investigating scientific misconduct. Her only link to NIH, she said, has been with

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## ... Parts of MIT, Tufts Reports "Evasive, Obfuscating"

(Continued from page 4)

Feder and Stewart.

Sitting at the witness table with O'Toole, Stewart told the Subcommittee that the MIT and Tufts reports were in part "evasive and obfuscating."

Rep. Gerry Sikorski (D-Minn.) asked Stewart about the make-up of a three-member committee appointed by NIH to investigate the O'Toole allegations. Stewart replied that one member, Fred Alt, now of Columbia University, had worked under Baltimore as a postdoctoral fellow and had co-authored 14 papers with Baltimore; another, James Darnell, of Rockefeller University, was co-author of a textbook with Baltimore. After the appointments were protested by Stewart and Feder on conflict-of-interest grounds, Alt and Darnell were dropped from the committee. Their replacements have not been disclosed by NIH.

Having started at 10:10 am, the Subcommittee proceeded through the lunch hour to the *piece de resistance* of the hearing, four Executive branch officials: Robert E. Windom, Assistant Secretary for Health, who is the official in the Department of Health and Human Services to whom NIH presumably reports; William F. Raub, Deputy Director of NIH; Mary Miers, a non-scientist who heads the one-and-a-half persons office at NIH responsible for investigating scientific misconduct, and Rex Cowdry, Acting Deputy Director of the National Institute of Mental Health.

Windom expressed confidence that the problem of scientific fraud, to the extent that it exists, is under control, mainly by relying on NIH grantee institutions to police themselves. In addition, he said, NIH has beefed up its own efforts to deal with fraud.

**Wyden.** Can you name three cases where universities or institutions thoroughly and accurately investigated and found serious misconduct or fraud within the university or institution?

**Windom.** I at this moment cannot cite you three cases. I don't have those cases in front of me.

**Wyden.** Could you cite one case where a university or an institution really got to the bottom of serious fraud and misconduct?

**Windom.** I cannot at this point give you one . . .

Wyden persisted, noting that "you have given a ringing endorsement of the current system" that is rife with "cronyism and the forces that push people to look the other way . . . Give us some instances where the system that you give such endorsement for really got to the bottom of serious misconduct and fraud . . . How do you make the assertion that the current system works so well?"

Windom still failed to fill Wyden's order, and the Congressman then asserted that, in addition to timid investigations by universities, there's evidence "in some

of these cases of an actual coverup."

Raub came to the rescue, saying that among 102 misconduct cases reported to NIH, "there were two by Harvard University following the Darsee matter, where, in our judgment, the process used and the conclusions reached by Harvard were first rate." Miers then joined the discussion. The Harvard cases cited by Raub, she said, had not received "extensive publicity and I prefer not to discuss the particulars, but I believe the record would show they did a good job." She also praised a case last year at the University of Cincinnati, "where the institution conducted an in-depth review of allegations of inaccuracies in an important clinical paper published by Dr. Charles Glick." Miers, in response to a request for other cases successfully handled at the local level, cited a case of "recent fabrications at the Dana-Farber Cancer Institute," in which, she said, a senior investigator identified "apparent fabrications" by a post-doctoral student. She also cited a case at the University of Geneva in 1983.

Dingell then returned to the Darsee frauds at Harvard, which were exposed in 1981. "Harvard claimed throughout their investigation that they checked data. The data did not exist. How can you tell me that that review process is working well?"

Raub conceded that "it did not work well," but said that since then Harvard has improved its methods for dealing with fraud. Harvard's methods are "now first rate," Raub stated.

**Dingell.** How do you know? Here not only did Darsee falsify his data but Harvard falsified its report to NIH.

**Raub.** As part of the Harvard process, Mrs. Miers and I visited with the dean, with some of the senior academic staff, and with a large number of the faculty who were deeply concerned about the failings in the Darsee case and in our judgment were clearly committed to developing a sound and effective process . . .

Dingell then asked about Eugene Braunwald, a powerful figure in cardiology, the field in which Darsee faked papers on which Braunwald was listed as a co-author: "What happened to Mr. Braunwald? No action was taken against him by NIH, isn't that right?" Raub agreed.

**Dingell.** And the individual [Braunwald] who was [Darsee's] supervisor is still on an NIH board [Heart, Lung, and Blood Institute Advisory Council], is he not?

**Raub.** Yes, sir.

**Dingell.** Would you call that a sanction against the individual concerned, Mr. Braunwald?

**Raub.** No, sir, I would not.

**Dingell.** It appears that he continues to draw the prestige that's associated with serving on an NIH board in spite of the fact that he did not carry forward his respon-

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## ... Dingell Assails Braunwald's Appointment to NIH Board

(Continued from page 5)

sibilities to supervise Dr. Darsee. Isn't that right?

**Raub.** That's correct.

**Wyden.** Were there any sanctions against any of the scientists on the [Harvard-appointed review] committee involved in the coverup?

**Raub.** Other than the [NIH] review . . . there were no special actions . . . Whatever the failing might have been in the earlier investigation by Harvard . . . when the committee appointed by the National Heart, Lung, and Blood Institute was carrying out its investigation, it had extraordinary cooperation from the leaders of that laboratory . . . including Dr. Braunwald.

Dingell then returned to the handling of the O'Toole case, asking Raub, "Do you call that good scientific technique?" Raub replied that on the basis of the testimony, "I share some of your concerns," and pointed out that NIH "regards its review [of the O'Toole case] as still open."

**Dingell.** Oh, you regard it as still open. How long has this review been open? Well over a year, is it not?

**Miers.** Sir, the matter was first brought to our attention as an issue of possible scientific error and not as scientific misconduct. The decision to undertake a formal review of this matter was taken only after our office had an opportunity to review the Stewart-Feder manuscript in conjunction with the institutional reports last fall . . .

**Dingell.** Dr. Imanishi-Kari now sits on an NIH board [the Immunobiology Study Section], does she not?

**Raub.** That's correct.

**Dingell.** What is the function of the board on which she sits?

**Miers.** Dr. Imanishi-Kari is a member of one of our hundred or so standing committees that review the scientific merit of applications.

**Dingell.** There is some question in my mind as to the boards you have out there. You have two people who have engaged in active fraud who participate in the continued review of NIH policies and grants and other matters.

**Miers.** Sir, we agree absolutely that the integrity of the individual is a factor, and at least in ten cases we have proscribed such service where we have documented misconduct.

**Dingell.** Is your test incompetence or misconduct?

**Miers.** We would not want an incompetent or a fraudulent scientist . . .

Dingell interrupted to seek an answer from Windom, asking him, "Do you test with regard to incompetence or with regard to corrupt behavior and fraud? Which is the test for getting on an NIH board? Which do you like, incompetence or fraud, or do you like neither?"

**Windom.** Neither one, sir. We keep both off.

**Dingell.** Well, you've got two here that I think you're going to have to report to the Committee on as to what your actions are. Because it appears clearly that there are no sanctions being applied.—DSG

(Continued in the next issue.)

## In Print

*Publications described here are obtainable as indicated—not from SGR.*

**R&D Funding: Foreign Sponsorship of US University Research** (GAO/RCED-88-89BR, 48 pp., no charge), report by the General Accounting Office, requested by Senator Lloyd Bentsen (D-Texas), states that the big foreign spending spree in the US has provided only small change for academic research. Based on 134 responses to questionnaires sent to 150 universities, the GAO says that 107 reported foreign research funds, but in total, it amounted to only \$74.3 million of the \$6.8 billion expended on R&D by these institutions in 1986. Of the foreign funds, \$27 million was provided by industrial firms, with the balance from government and non-profit organizations.

About half the R&D money from abroad was received by five universities, but in these cases, the money was still a relatively small slice of total R&D on campus. Tops was Texas A&M, with \$15 million in foreign contributions to a cooperative ocean-drilling program that's mainly supported by NSF. Harvard, \$10.8 million; MIT, \$5.3 million, Oregon State University, \$4.1 million, and University of Wisconsin, \$2.4 million. Included in the GAO report is an apparently unique school-by-school tabulation, covering 107 universities, of total R&D receipts, national rankings, and amounts from domestic and foreign sources.

**Order from:** GAO, PO Box 6015, Gaithersburg, Md., 20877; tel. 202/275-6241.

**Government Information Controls: Implications for Scholarship, Science and Technology** (62 pp., no charge), by John Shattuck and Muriel M. Spence, Office of Government, Community and Public Affairs, Harvard University, describes the many measures instituted by the Reagan Administration for restricting circulation of information, some in the name of national security, others in support of the Administration's domestic ideology. The rules, whether invoked or merely lurking, are a needless burden on scholarship and the economy, the authors argue, and they urge the next President to give reform a high priority.

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## In Print: R&D in USSR, France, Belgium, Plus Other Works

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**Order from:** Association of American Universities, One Dupont Circle, Suite 730, Washington, DC 20036; tel. 202/466-5030.

**Science and Technology in the USSR** (405 pp., \$95.00), edited by Michael J. Berry; **Science and Technology in France and Belgium** (131 pp. \$100.00), edited by E. Walter Kellermann. Latest volumes in the Longman Guide to World Science and Technology, produced by the Longman Group UK. The series provide basic information about the organization and finance of national research programs, describe government administration of research and major research institutions, and tell how to get more information. Previous volumes in the series are on the Middle East, Latin America, China, Japan, USA, Eastern Europe, West Germany, Africa, UK, Scandinavia, and (in one volume) Australia, Antarctic and the Pacific.

**Order from:** Gale Research Co., Book Tower, Detroit, Michigan 48226; tel. 313/961-2242.

**Simplified and Standardized Model Agreements for University-Industry Cooperative Research** (no charge), contains "simplified models" of contracts, drafted by industrial representatives and reviewed by academic officials, all under the auspices of the National Academy of Sciences' Government-University-Industry Research Roundtable in collaboration with the Industrial Research Institute. Points covered include rights to inventions and discoveries and ground rules for publication.

**Order from:** NAS, Government-University-Industry Research Roundtable, 2100 Constitution Ave. NW, Washington, DC 20418; tel. 202/334-3486.

**Energy-Related Science and Engineering Personnel Outlook, 1987** (73 pp., no charge), fifth report in a series mandated in the Act founding the Department of Energy, presents a gloomy picture of employment of scientists and engineers in energy fields. From 390,000 in 1984, the total fell to 342,000 in 1986. The forecast for 1992 is for a slight upswing, to 356,000. The report predicts a continuing decline in federal energy R&D support—by a "real" 19 percent between 1986-92. But given energy's sensitivity to political shifts, forecasts on this subject have tended to be shaky.

**Order from:** USDOE, Office of Energy Research, Manpower Assessment Program, Washington, DC 20585; tel. 202/586-6641.

**A National Action Agenda for Engineering Education** (39 pp., no charge), report to the American Society for Engineering Education by a 12-member committee

chaired by Edward E. David Jr., former White House Science Adviser and President, Exxon Research and Engineering, warns that the undergraduate engineering curriculum "cannot be further stretched to include an ever-increasing amount of technical and non-technical subject matter," and urges "repackaging" to "provide the knowledge base and capability for career-long learning. It should include the appropriate sciences and mathematics and the fundamental concepts of analysis and design." The report also includes recommendations on faculty development and retention, pre-college education, and wider use of computers in engineering.

**Order from:** American Society for Engineering Education, Eleven Dupont Circle, Suite 200, Washington, DC 20036; tel. 202/293-7080.

## Job Changes & Appointments

**Thomas F. Malone**, former Deputy Director of NIH, has been appointed Vice President for Biomedical Research of the Association of American Medical Colleges. Malone retired from NIH in 1986 and has since been Associate Vice Chancellor for Research, University of Maryland Graduate School, Baltimore.

**John Laszlo** has been appointed Senior Vice President for Research at the American Cancer Society, succeeding **Frank Rauscher**, who has retired. **Gerald P. Murphy** has been appointed ACS Senior Vice President for Medical Affairs, succeeding **Arthur I. Holleb**, who has also retired.

**Patrick Young**, a science and medical writer for the Newhouse News Service, has been appointed Editor of *Science News*, the weekly published by Science Service. He succeeds **Joel Greenberg**, who has been appointed Science Editor of the *Los Angeles Times*.

**Ellis Rubenstein**, a veteran science editor, has been appointed Editor of *The Scientist*, succeeding founding Editor **Tabitha Powledge**, who is joining the staff of the American Association for the Advancement of Science to edit a forthcoming new publication for the AAAS membership. *The Scientist*, published by the Institute for Scientific Information, is relocating from Washington to ISI headquarters, in Philadelphia, shedding most of its original staff in the process. Now 18 months old, the paper is due for a complete redesign as part of a "re-launching" plan aimed at attracting paid subscribers and ads.

## Carnegie Creates Commission on Science Policy

With a blue-ribbon cast, ranging from Jimmy Carter to chiefs of industry and big academe, the Carnegie Corporation has announced the establishment of a Commission on Science, Technology and Government. Co-chairs are Joshua Lederberg, President of Rockefeller University, and William T. Golden, President of the New York Academy of Sciences. Golden, a Truman-era science adviser, is a persistent campaigner for restoring the defunct President's Science Advisory Committee to the White House science advisory structure. Carnegie says it's providing \$500,000 for the Commission's first six months of operations.

A Carnegie press release describes the Commission as "non-partisan," and it indeed appears to be in the sense that the membership range is broad mainstream. But it can also be properly described as mainly non-Reaganesque in its ideological makeup. The Commission comes into existence at a time when the quality of science advice at the White House is widely regarded as down in a postwar pit.

According to a statement by Carnegie President David Hamburg, the Commission will be guided by the recommendations of a Carnegie study group that said it "should consider the entire range of the sciences—physical, biological, behavioral, and social—as well as the technologies based on them. The main emphasis should be on mechanisms by which the government can systematically assess the ways in which science can contribute to the general well-being of the nation, with special emphasis on the most serious social problems. Mechanisms for sustaining

the health of the scientific enterprise should also be considered." Besides Carter, Lederberg and Golden, members are:

Richard C. Atkinson, Chancellor, UC San Diego  
Norman R. Augustine, CEO, Martin Marietta  
John Brademas, President, NYU  
Lewis Branscomb, Director, Science, Technology, and Public Policy Program, Kennedy School of Government  
William T. Coleman, Corporate attorney and civil rights leader; former Secretary of Transportation  
Sidney Drell, Deputy Director, Stanford Linear Accelerator

Senator Daniel J. Evans (R-Wash.)  
General Andrew W. Goodpaster, Chairman, Atlantic Council

Admiral Bobby Inman, CEO, Westmark Systems; former CIA Deputy Director

Helene L. Kaplan, New York attorney; Carnegie Board Chairman

Donald Kennedy, President, Stanford University  
William J. Perry, Chairman, H&Q Technology; former Undersecretary for Defense R&D

James B. Reston, columnist, *New York Times*  
Robert Solow, Professor of Economics, MIT  
H. Guyford Stever, Foreign Secretary, National Academy of Engineering; Science Adviser to President Ford  
Sheila E. Widnall, Professor of Aeronautics and Astronautics, MIT; Chairman, AAAS Board

Jerome B. Wiesner, former President, MIT; Science Adviser to President Kennedy

David Z. Robinson, Carnegie Executive Vice President, will serve as Executive Director of the Commission. Robinson served in the White House Science Office from 1961-67.

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